Statistical Bulletin

METROPOLITAN LIFE INSURANCE COMPANY

Volume 37 September 1956

Longevity Reaches Three Score and Ten

A historic milestone was reached in 1955 when the expectation of life at birth among American wage earners and their families, as represented by the Industrial policyholders of the Metropolitan Life Insurance Company, rose to a new high of 70.0 years. Although this figure is only slightly higher than that for 1954, it marks the 12th successive year to record a rise. As Table 1 on the next page shows, the average length of life of these policyholders has increased 5 years since 1945, 10 years since 1935, and 24 years since 1909. In 1879-94, the earliest period for which data are available in this experience, the average was only 34 years—less than half that for 1955.

Each of the color-sex groups among the insured has shared in the gains of recent years, but not in equal measure. Females have done better than males, with the result that their advantage is greater than ever before. In 1955, the expectation of life at age 5 was 70.1 years for white females and 63.9 years for white males, a difference of more than 6 years. The margin in favor of females decreases with advance in age, but it still amounts to 2½ years at age 65, when the expectation of life is 15.1 years for white females and 12.5 years for white males.

Although the colored policyholders have been making greater gains than the white in recent years, their longevity record still lags behind that of the white policyholders. In 1955, the expectation of life at age 5 for colored males was nearly two years less than that for white males; for females the disparity was as much as four and a half years.

Details with respect to the longevity of the Industrial policyholders in 1955, together with the corresponding mortality rates, are shown in Table 2. The achievements in life conservation are reflected in the very low death rates now experienced in childhood and early adult life. Mortality rates under 1 per 1,000 were recorded from ages 3 through 16 years

TABLE 1—EXPECTATION OF LIFE AT BIRTH
Industrial Policyholders,* Metropolitan Life Insurance Company
1879-94 to 1955

Calendar Year	Expectation In Years	Calendar Year	Expectation In Years	Calendar Year	Expectation In Years
1955	70.0	1942†	64.3	1929	55.8
1954†	69.8	1941	63.4	1928	55.9
1953†	68.9	1940	62.9	1927	56.4
1952†	68.5	1939	62.5	1926	55.0
1951†	68.4	1938	61.9	1925	55.5
1950†	68.3	1937	60.7	1924	55.6
1949	67.7	1936	60.3	1923	54.5
1948	67.2	1935	60.2	1922	55.0
1947	66.5	1934	59.5	1921	55.1
1946†	65.6	1933	59.2	1919-20	51.1
1945†	64.9	1932	58.8	1911-12	46.6
1944†	64.4	1931	57.9	1909	46.3
1943†	63.9	1930	57.4	1879-94	34.0

Gain, 1955 since 1909, 23.7 years; since 1879-94, 36.0 years.

*The figures for 1948 through 1955 relate to Weekly and Monthly premium-paying policies; 1955 includes in addition persons with Ordinary Monthly Premium Policies for Less Than $1,000; prior to 1948 the figures relate to Weekly policies only.

†Excludes deaths from enemy action.

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TABLE 2—EXPECTATION OF LIFE AND MORTALITY AT SPECIFIED AGES
By Color and Sex. Industrial Policyholders*
Metropolitan Life Insurance Company, 1955

Age, Years	Expectation of Life in Years					Mortality Rate per 1,000				
	Total Persons	White		Colored		Total Persons	White		Colored	
		Male	Female	Male	Female		Male	Female	Male	Female
5	67.2	63.9	70.1	62.1	65.6	0.5	0.5	0.5	0.7	0.6
10	62.3	59.0	65.2	57.3	60.8	.3	.4	.3	.6	.3
15	57.4	54.2	60.3	52.5	55.9	.6	.8	.4	.9	.5
20	52.6	49.4	55.4	47.8	51.1	1.0	1.3	.5	1.8	.9
25	47.9	44.8	50.6	43.3	46.3	1.1	1.4	.6	2.6	1.4
30	43.2	40.1	45.7	38.8	41.7	1.2	1.6	.8	2.9	1.8
35	38.4	35.4	40.9	34.4	37.1	1.8	2.3	1.2	3.5	2.9
40	33.8	30.9	36.2	30.0	32.7	2.8	3.7	1.9	5.4	4.4
45	29.4	26.5	31.6	25.9	28.5	4.6	6.2	3.1	8.2	6.4
50	25.1	22.5	27.1	22.1	24.5	7.3	10.8	4.7	11.7	9.3
55	21.1	18.8	22.8	18.5	20.7	11.2	16.5	7.5	17.2	13.6
60	17.4	15.5	18.8	15.2	17.2	16.9	24.2	12.1	25.9	18.8
65	14.0	12.5	15.1	12.3	13.9	26.5	36.4	20.3	37.5	27.9

*Includes persons with Ordinary Monthly Premium Policies for Less Than $1,000.

among white males and in the age range 2-33 years among white females. The experience among the colored policyholders was not as favorable; death rates under 1 per 1,000 were recorded at ages 4-15 for males and 3-20 for females. The disadvantage of the colored was particularly evident in early and middle adult life. For men at ages 22-35, the mortality among the colored was more than 1½ times that for the white. For women the difference was even greater; from age 23 to the end of the childbearing period the ratio of mortality was at least 2 to 1.

For nearly two generations the average length of life has been increasing more rapidly among American wage earners and their families than for the general population of the United States. In 1909, the average lifetime of the Company's Industrial policyholders was about six years less than that for the population as a whole. Since then the disparity has been narrowing; at present the two groups are on a par.

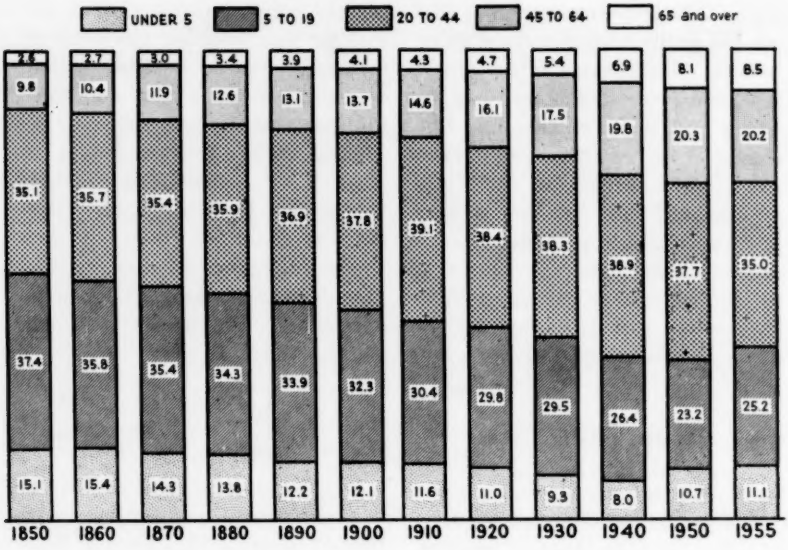
Our Aging Population

THE proportion of older people in our population has been increasing for more than a century, slowly at first and more rapidly in recent decades. As the chart on page 4 shows, in 1900 only 4.1 percent of the people in the United States were 65 years of age or older; the proportion rose to 8.5 percent by 1955, so that the elders now account for about 1 in every 12 persons in the population. The number at ages 65 and over increased from 3,100,000 in 1900 to 14,128,000 in 1955.

A significant factor in the aging of the population is the increase in the chances of survival. According to mortality conditions at the turn of the century, only two fifths of the newborn would reach age 65; currently the proportion exceeds two thirds. Furthermore, the expectation of life for the general population at age 65 has increased from less than 12 years in 1900-02 to about 14½ years at present. A more important factor contributing to the aging of the population is the long-term decline in the birth rate, which resulted in a steadily diminishing proportion of children in the population until 1940 and a compensating rise in the proportion of elders. However, the proportion in the older segment of the population has continued to increase despite the relatively high birth rates of the past decade. Lastly, our aged include a large body of foreign born who arrived three or more decades ago; in contrast, there has been only a relatively small number of young immigrants coming into our country in recent decades.

As may be seen in the table on page 5, the States vary appreciably

PERCENT DISTRIBUTION OF POPULATION BY AGE
United States, 1850 to 1955



with respect to the proportion of older people in their population. In 1954, the latest year for which data are available, eight States had more than 10 percent of their people in the age bracket 65 and over; all these States were either in New England or the Midwest. At the other extreme, the States with the lowest proportion of elders were in the South or Southwest. For individual States, the proportion ranged from 11.0 percent in Iowa and New Hampshire to 5.3 percent in New Mexico. In Florida the elders constituted 9.3 percent of the population, and in California 8.6 percent, or the same as the average for the country as a whole. In 1954, New York State had nearly 1½ million people at ages 65 and over, California had little more than one million, and Pennsylvania close to a million.

A continued, rapid growth of our aged population is in prospect. The Bureau of the Census estimates that by 1975 people at ages 65 and over will number about 20½ million, or nearly 6½ million more than at present. This is a conservative estimate, since it does not allow for any improvement in mortality after 1960.

Meeting the medical needs of the large and growing population of older people in our country is a challenging problem. The incidence of chronic disease and disabling illness is highest in later

life, and consequently the prevalence of these conditions increases as the proportion of older people rises. More and more, medical, surgical, and hospital facilities and services are being devoted to the health problems at the older ages. In order to stimulate interest and promote research on these problems, the American Medical Association has recently established a Committee on Aging under its Council on Medical Service.

The growing proportion of elders in the population is also accentuating the problem of widowhood. Although the average length of life has been increasing, both the number of widows at the older ages and their expected period of widowhood have likewise been rising. This paradox is explained by the fact that for a long time the gains in longevity have been more rapid for females than for males.

To help the aged meet their needs during retirement as well as the needs of their dependent survivors, private Life insurance has developed a wide variety of plans under which the family head may build up funds over his productive years.

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POPULATION AT AGES 65 AND OVER, BY STATE, JULY 1, 1954

State	Number	Percent of Total Civilian Population	State	Number	Percent of Total Civilian Population
United States	13,729,000	8.6	Colorado	129,000	8.9
			Pennsylvania	978,000	8.9
Iowa	293,000	11.0	California	1,044,000	8.6
New Hampshire	60,000	11.0	Kentucky	251,000	8.6
Maine	95,000	10.8	New Jersey	450,000	8.6
Missouri	434,000	10.8	North Dakota	54,000	8.6
Vermont	40,000	10.7	Idaho	49,000	8.3
Nebraska	144,000	10.6	Delaware	29,000	7.8
Massachusetts	510,000	10.5	District of Columbia	63,000	7.6
Kansas	209,000	10.5	Michigan	534,000	7.6
Oklahoma	209,000	9.8	West Virginia	152,000	7.6
Washington	240,000	9.8	Tennessee	254,000	7.6
Minnesota	304,000	9.7	Mississippi	159,000	7.5
Rhode Island	78,000	9.7	Wyoming	22,000	7.5
Montana	59,000	9.6	Alabama	214,000	7.2
Wisconsin	346,000	9.6	Maryland	181,000	7.2
South Dakota	63,000	9.5	Texas	591,000	7.2
Florida	297,000	9.3	Virginia	237,000	7.0
Illinois	854,000	9.3	Georgia	243,000	6.9
Indiana	392,000	9.3	Louisiana	193,000	6.8
Oregon	153,000	9.3	Nevada	13,000	6.6
Arkansas	163,000	9.2	Utah	49,000	6.4
Connecticut	201,000	9.2	North Carolina	253,000	6.1
New York	1,430,000	9.1	South Carolina	130,000	5.9
Ohio	785,000	9.0	Arizona	53,000	5.8
			New Mexico	39,000	5.3

Source: Bureau of the Census, *Current Population Reports*, Series P-25, No. 130, 1956.

How Firearm Accidents Occur

FIREARM accidents in the United States take an annual toll of more than 2,200 lives or 1.4 per 100,000 population. They rank fifth as a cause of fatal accidental injury, being outnumbered by motor vehicle mishaps, falls, fires, and drownings.

Nearly two fifths of the deaths from firearm accidents each year occur in the three-month period from October through December. November is the peak month because of the large number of people who go hunting at that time. The average daily death toll from firearms in November is about 80 percent greater than the annual daily average; in October and December the excess is about 40 percent.

The mortality from firearm accidents is largely concentrated among males, and is at a maximum among teen-age boys. This is illustrated by the experience among the Industrial policyholders of the Metropolitan Life Insurance Company during 1953-55. Among male policyholders the annual death rate from this cause averaged 1.6 per 100,000, or 8 times that among females. The mortality rate for males rose from .4 per 100,000 at ages 1-9 years to a peak of 3.9 per 100,000 at ages 15-19, after which it decreased progressively with advance in age. The details may be seen in the accompanying chart.

An insight into the circumstances under which firearm accidents occur is provided by the death claim records of 302 Industrial policyholders who were killed in such accidents during 1953-55. No less than three fifths of these victims were injured in and about the home, while nearly one fourth of the total lost their lives in hunting accidents. Most of the remaining deaths were associated with outdoor activities other than hunting, an appreciable number occurring during target shooting. Rifles and shotguns were involved in nearly three out of every four casualties in this study, pistols and revolvers accounting for the others.

The table on page 7 gives a ready picture of the important role that inexperienced and faulty handling of weapons plays in the

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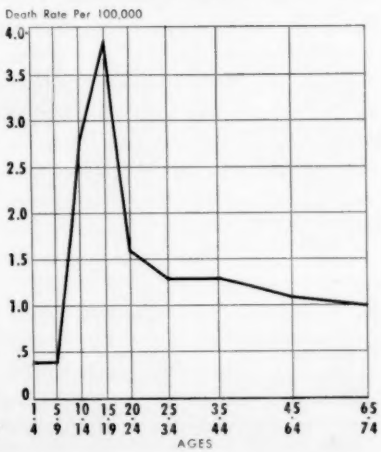
FATAL FIREARM ACCIDENTS

Death Rate per 100,000 Males, by Age
Metropolitan Life Insurance Company
Industrial Policyholders, 1953-55



NUMBER OF DEATHS FROM FIREARM ACCIDENTS
According to Place of Occurrence and Activity of Person Discharging Gun
Industrial Policyholders, Metropolitan Life Insurance Company,* 1953-55

Place of Occurrence and Activity	Total	Weapon Discharged By		
		Victim	Another Person	Unspecified
Total	302	119	148	35
Home	173	81	77†	15
Playing with weapon	49	18	31	—
Examining or demonstrating weapon	25	9	16	—
Cleaning or repairing weapon	22	14	8	—
Russian roulette	11	11	—	—
Picking up or setting down weapon	9	9	—	—
Loading or unloading weapon	9	7	2	—
Shooter tripping or falling	7	6	1	—
Scuffling for possession of weapon	5	1	4	—
Hunting	72	24	45‡	3
Walking into line of fire, or unseen by shooter	11	—	11	—
Shooter tripping or falling	10	7	3	—
Mistaken for game	9	—	9	—
Picking up or setting down weapon	7	6	1	—
Carrying or pulling weapon through fence	4	4	—	—
Other and Unspecified	57	14	26	17
Playing with weapon	12	5	7	—
Walking into line of fire, or unseen by shooter	6	—	5	1

*Exclusive of the Pacific Coast and Canada.
†Weapon discharged by member of victim's family in 43 instances.
‡Weapon discharged by member of own hunting party in 44 instances.
Note: Only the activities causing an appreciable number of deaths are listed in detail.

toll from firearm accidents. Of the 173 deaths in and about the home, 49 resulted from people playing with weapons; the majority of these victims were children under 15 years of age. An additional 25 lives were lost because guns were accidentally discharged while being examined or demonstrated, and nearly as many persons were fatally injured when firearms went off as they were being cleaned or repaired. In a considerable number of cases, the person responsible for the accident actually pointed the gun at the one fatally wounded; not a few of the deaths were attributed to "unloaded guns." At least 11 of the deaths in the home were caused by "Russian roulette,"

a game in which the participant spins the cylinder of a gun containing but one cartridge and then points the weapon at his head and pulls the trigger on the chance that it is opposite an empty chamber.

The 72 deaths sustained in hunting accidents were due to a variety of circumstances; the most common were persons being unseen or walking into the line of fire, hunters tripping over roots or other objects, and hunters mistaking the victims for game. Other fatal injuries occurred when loaded rifles and shotguns were picked up, set down, or handed to other persons, and when attempts were made to pull such weapons over or through fences. Three fifths of the fatally injured hunters in this study were killed by the weapons of their companions.

The "other" fatal firearm accidents in the table accounted for almost one fifth of the total. In general, they resulted from the faulty handling of weapons and from the lack of common sense precautions by persons using firearms; in other instances, the victims were moving about in areas where target shooting was going on. Several children were killed while they were playing "cowboys and Indians," "draw," and other games in which loaded firearms were used.

Although firearms are handled safely by a great many people in the United States, they nevertheless account for a considerable death toll. Almost all such fatal injuries can be prevented through the exercise of greater care and caution. Firearms are not toys, yet fully one fifth of all the deaths in this study were attributed to "playing with weapons." Many lives would be saved annually if persons carrying loaded guns made sure that the safety was on, if guns and ammunition were stored out of reach of children, and if persons shooting at game were certain of their target.

Thyroid Gland Disorders

THE thyroid gland is subject to a number of disorders, both malignant and nonmalignant. Predominant in the latter group are simple enlargement of the gland, nontoxic nodular goiter, hyperthyroidism, and hypothyroidism. The current prevalence of nonmalignant thyroid disorders is not known, but it is certainly far below the prevalence two decades ago, when an estimated 1,200,000 people in the United States—9 per 1,000 population — were affected. Thyroid cancer cases now number about 5,000.

The toll of disability and death exacted by the diseases of the thyroid gland is relatively small. In the National Health Survey of 1935-36, the frequency of disabilities lasting a week or longer was

MORTALITY FROM TOXIC GOITER AND THYROID CANCER
White Persons by Sex and Age. Industrial Policyholders
Metropolitan Life Insurance Company, 1953-55 and 1943-45

Age Period (Years)	Death Rates per Million				Percent Change	
	Males		Females			
	1953-55	1943-45	1953-55	1943-45	Males	Females
	Toxic Goiter					
1-74*	1.4	4.6	4.9	20.3	− 70	−76
35-44	1.5†	8.4	3.1	22.6	‡	−86
45-54	2.9	11.4	10.3	55.6	− 75	−81
55-64	8.3	15.0	25.9	96.4	− 45	−73
65-74	7.9	21.8	40.4	115.6	− 64	−65
	Cancer of the Thyroid Gland					
1-74*	2.5	1.7	4.2	3.5	+ 47	+20
35-44	1.0†	.5†	3.1	2.1	‡	+48
45-54	9.9	3.3	8.5	8.6	+200	− 1
55-64	10.7	8.4	20.1	20.8	+ 27	− 3
65-74	19.6	21.8	45.1	28.0	− 10	+61

*Death rates adjusted for age on basis of the Standard Million Population of England and Wales, 1901.
†Based on less than five deaths.
‡Not computed.

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only 0.6 per 1,000 persons a year. In 1954, the thyroid diseases accounted for 2,227 deaths in our country, 1,000 of which were ascribed to thyroid cancer and 863 to toxic goiter (hyperthyroidism).

Disorders of the thyroid affect many more females than males. In the National Health Survey of two decades ago, the prevalence of these conditions in females was 8 times that in males at ages 20-34, and 5½ times that among males at ages 35-64.

The prevalence of goiter in our country has long been highest in the States bordering on the Great Lakes and in certain mountainous areas. This geographic concentration apparently reflects the lack of sufficient iodine in the water supply and in the soil. In recent decades, the increased availability of sea foods rich in iodine and the use of iodized salt have lowered the frequency of goiter among residents of those regions. However, prevalence of goiter there is still higher than it is in other parts of the country. In contrast, thyroid

cancer has no characteristic geographic pattern.

Toxic goiter, which accounts for most deaths from nonmalignant thyroid disease, has recorded a sizable reduction in mortality, a reflection of both decreased frequency and improved treatment. In the decade between 1943-45 and 1953-55, the death rate from toxic goiter fell more than 75 percent among white females insured under Industrial policies in the Metropolitan Life Insurance Company; among insured males, the reduction was almost as rapid, as may be seen in the table on page 9. In both sexes, marked reductions in mortality from this cause were recorded throughout the adult ages.

In contrast, the trend of mortality from cancer of the thyroid has been moderately upward in both sexes, and particularly among older women. It is not possible, however, to determine how much of this increase represents a true rise in frequency and how much of it reflects more frequent recognition of the condition. Newer diagnostic techniques, notably the use of radioactive iodine, help to differentiate malignant from nonmalignant disorders of the gland.

The outlook for persons with nonmalignant thyroid disorders is generally good. This is indicated by the combined experience of many large Life insurance companies during 1935-1950* on selected applicants accepted for Ordinary Life insurance who had a nontoxic goiter or a history of surgery for toxic or nontoxic goiter at the time of their insurance medical examination. The mortality among those with nontoxic goiter, with or without operation, was little different from that among standard Ordinary risks generally; for those with a history of surgery for toxic goiter, the mortality was only slightly higher than for standard risks.

Recent clinical studies likewise show a good prognosis for thyroid diseases. Radioactive iodine has been used in the treatment of hyperthyroidism, and has proved very effective in some types of cases. Good results are obtained by surgery in thyroid cancer. A recent follow-up study of the experience of a large cancer hospital showed that nearly half such patients were known to be living and free of cancer five years after surgery. Other hospital experiences, however, indicate that the survival rate thereafter declines rather sharply. In inoperable thyroid cancer, radioactive iodine has proved of value in management of the condition.

Ways and means of preventing, diagnosing, and treating the thyroid diseases are better than at any time in the past. Further advances may be expected as wider application is made of existing knowledge, and as newer knowledge is developed through additional research.

*1951 *Impairment Study*, Society of Actuaries, April 1954.

MORTALITY FROM SELECTED CAUSES

Industrial Policyholders, Metropolitan Life Insurance Company

August 1956

Cause of Death	Annual Rate per 100,000 Policyholders*				
	August		Year to Date		
	1956	1955	1956	1955	1954
All Causes†	593.6	634.6	644.2	637.3	635 9
Tuberculosis (all forms)	6.5	8.1	7.7	8.3	9.6
Communicable diseases of childhood	.2	.3	.3	.3	.4
Acute poliomyelitis	.7	1.5	.2	.4	.3
Malignant neoplasms	127.6	137.2	130.9	130.4	129.2
Digestive system	42.4	50.4	44.6	45.8	47.0
Respiratory system	17.3	15.8	17.5	16.5	16.4
Diabetes mellitus	13.3	15.6	15.4	15.4	14.9
Diseases of the cardiovascular-renal system	309.3	323.6	342.8	337.4	334.5
Vascular lesions, central nervous system	61.4	67.8	67.1	66.4	65.0
Diseases of heart	225.7	230.1	250.6	245.5	242.9
Chronic rheumatic heart disease	11.0	11.3	11.9	12.4	12.6
Arteriosclerotic and degenerative heart disease	174.3	177.0	194.8	189.1	182.6
Diseases of coronary arteries	102.0	100.7	111.7	109.2	108.0
Hypertension with heart disease	31.3	31.6	35.3	35.4	38.5
Other diseases of heart	9.1	10.2	8.6	8.6	9.2
Nephritis and nephrosis	6.8	8.6	8.0	8.9	9.5
Pneumonia and influenza	11.0	11.4	16.8	15.5	14.9
Complications of pregnancy, childbirth	.4	1.4	.9	1.0	1.1
Suicide	5.7	5.5	5.8	6.2	5.6
Homicide	2.7	2.1	2.2	2.2	2.3
Accidents—total	42.0	45.1	37.6	36.1	37.0
Motor vehicle	16.8	16.2	15.7	14.5	14.3
All other causes	74.2	82.8	83.6	84.1	86 1

*Persons insured under Industrial premium-paying policies for 1954; beginning with 1955 there are included in addition persons with Ordinary Monthly Premium Policies for Less Than $1,000, and beginning with March 1956 persons with Debit Book Ordinary policies for $2,000 or less.

†Excludes war deaths (enemy action).

Note: The rates for 1955 and 1956 are provisional.

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MORTALITY FROM ALL CAUSES

INDUSTRIAL POLICYHOLDERS · METROPOLITAN LIFE INSURANCE COMPANY

	(DEC)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1955		6.8	6.7	6.7	6.3	6.1	6.2	6.0	6.3	5.9	6.0	6.1	5.9
1956		7.0	6.5	6.8	6.8	6.4	6.2	5.9	5.9				

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